

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

1-31. (canceled)

32. (currently amended) A method of a build environment for packaged software delivery in a distributed network of nodes, the method comprising the computer-implemented steps of:

the build environment compiling source code files into one or more executable file modules;

wherein each of the one or more modules contains an image for a process or a dynamically linked library (DLL);

the build environment creating a software package that comprises the one or more modules, wherein the software package is delivered to the nodes in the distributed network;

wherein the software package is created based on at least one of a feature, characteristic, or purpose;

the build environment creating metadata for a first module, of the one or more modules, that includes any module information such as the first module's: binary signature, name, directory path, and characteristics, wherein the first module provides and uses at least one application program interface (API);

~~the build environment inserting the metadata of the first module into the software package; and~~

the build environment gathering ~~application program interface (API)~~ API dependency information for the first module, ~~wherein the first module can provide and use at least one API~~, by

- (a) receiving a list of dependent modules for a given process or DLL of the first module;
- (b) storing, in the metadata of the first module, dependency information for the dependent modules in the list, wherein the dependency information includes API names and versions that the process or DLL depends on;
- (c) collecting additional dependency information from one or more module specifications that are separate from the list of dependent modules, wherein the additional dependency information includes API names and versions that the process or DLL depends on; and
- (d) storing the additional dependency information in the metadata of the first module; and

the build environment inserting the metadata of the first module into the software package.

33. (previously presented) A method as recited in Claim 32, wherein a linker creates the list of dependent modules for the given process or DLL and places the list in the metadata of the first module.
34. (previously presented) A method as recited in Claim 32, further comprising the steps of: creating metadata for each API; and

- inserting the API metadata into the software package, wherein metadata for an API includes, but is not limited to: the API's name and version.
35. (previously presented) A method as recited in Claim 32, further comprising the step of: calculating a binary signature for each module of the one or more modules and inserting the binary signature into the respective module's metadata; wherein each unique version of a module will have a unique binary signature.
36. (previously presented) A method as recited in Claim 32, further comprising the steps of: creating metadata for the software package that includes any package information such as the software package's: name, build date, and characteristics; and inserting the metadata of the software package into the software package.
37. (currently amended) A method of a build environment for packaged software delivery in a distributed network of nodes, the method comprising the computer-implemented steps of: the build environment compiling source code files into one or more executable file modules; wherein each of the one or more modules contains an image for a process or a dynamically linked library (DLL); the build environment creating a software package that comprises the one or more modules, wherein the software package is delivered to the nodes in the distributed network;

the build environment creating metadata for a first module, of the one or more modules,  
that includes any module information such as the first module's: binary signature,  
name, directory path, and characteristics, wherein the first module provides and  
uses at least one application program interface (API);

~~the build environment inserting the metadata of the first module into the software  
package; and~~

the build environment gathering ~~application program interface (API)~~ API dependency  
information for the first module, ~~wherein the first module can provide and use at  
least one API,~~ by

(a) receiving a list of dependent modules for a given process or DLL of the first  
module; and

(b) storing, in the metadata of the first module, dependency information for the  
dependent modules in the list, wherein the dependency information includes  
API names and versions that the process or DLL depends on; and

the build environment inserting the metadata of the first module into the software  
package.

38. (previously presented) A method as recited in Claim 37, wherein a linker creates the list  
of dependent modules for the given process or DLL and places the list in the metadata of  
the first module.

39. (previously presented) A method as recited in Claim 37, further comprising the step of:  
the build environment collecting additional dependencies from one or more module  
specifications that are separate from the list of dependent modules and placing the  
additional dependencies into the metadata of the first module;  
wherein the additional dependencies documented in each module lists API names and  
versions that the process or DLL depends on.
40. (previously presented) A method as recited in Claim 37, further comprising the steps of:  
creating metadata for each API; and  
inserting the API metadata into the software package, wherein metadata for an API  
includes, but is not limited to: the API's name and version.
41. (previously presented) A method as recited in Claim 37, further comprising the step of:  
calculating a binary signature for each module of the one or more modules and inserting  
the binary signature into the respective module's metadata;  
wherein each unique version of a module will have a unique binary signature.
42. (previously presented) A method as recited in Claim 37, wherein packages are created  
based on at least one of a feature, characteristic, or purpose.
43. (previously presented) A method as recited in Claim 37, further comprising the steps of:  
creating metadata for the software package that includes any package information such as  
the package's: name, build date, and characteristics; and  
inserting the metadata of the software package into the software package.

44. (currently amended) An apparatus for a build environment for packaged software delivery in a distributed network of nodes, comprising:
- means for the build environment compiling source code files into one or more executable file modules;
- wherein each of the one or more modules contains an image for a process or a dynamically linked library (DLL);
- means for the build environment creating a software package that comprises the one or more modules, wherein the software package is delivered to the nodes in the distributed network;
- means for the build environment creating metadata for a first module, of the one or more modules, that includes any module information such as the first module's: binary signature, name, directory path, and characteristics, wherein the first module provides and uses at least one application program interface (API);
- ~~means for the build environment inserting the metadata of the first module into the software package; and~~
- means for the build environment gathering ~~application program interface (API)~~ API dependency information for the first module, ~~wherein the first module can provide and use at least one API,~~ by
- (a) receiving a list of dependent modules for a given process or DLL of the first module; and
  - (b) storing, in the metadata of the first module, dependency information for the dependent modules in the list, wherein the dependency information includes API names and versions that the process or DLL depends on; and

means for the build environment inserting the metadata of the first module into the software package.

45. (previously presented) An apparatus as recited in Claim 44, further comprising:  
a linker, wherein said linker creates the list of dependent modules for the given process or DLL and places the list in the metadata of the first module.
46. (previously presented) An apparatus as recited in Claim 44, further comprising:  
means for the build environment collecting additional dependencies from one or more module specifications that are separate from the list of dependent modules and placing the additional dependencies into the metadata of the first module;  
wherein the additional dependencies documented in each module lists API names and versions that the process or DLL depends on.
47. (previously presented) An apparatus as recited in Claim 44, further comprising:  
means for creating metadata for each API; and  
means for inserting the API metadata into the software package, wherein metadata for an API includes, but is not limited to: the API's name and version.
48. (previously presented) An apparatus as recited in Claim 44, further comprising:  
means for calculating a binary signature for each module of the one or more modules and inserting the binary signature into the respective module's metadata, wherein each unique version of a module will have a unique binary signature.

49. (previously presented) An apparatus as recited in Claim 44, wherein packages are created based on at least one of a feature, characteristic, or purpose.
50. (previously presented) An apparatus as recited in Claim 44, further comprising:  
means for creating metadata for the software package that includes any package  
information such as the software package's: name, build date, and characteristics;  
and  
means for inserting the metadata of the software package into the software package.
51. (currently amended) A computer-readable medium, tangibly embodied on a physical storage medium, wherein the computer-readable medium is one of a volatile medium or a non-volatile medium, the computer-readable medium carrying one or more sequences of instructions of a build environment for packaged software delivery in a distributed network of nodes, which instructions, when executed by one or more processors, cause the one or more processors to carry out the steps of:  
compiling source code files into one or more executable file modules;  
wherein each of the one or more modules contains an image for a process or a  
dynamically linked library (DLL);  
creating a software package that comprises the one or more modules, wherein the  
software package is delivered to the nodes in the distributed network;  
creating metadata for a first module, of the one or more modules, that includes any  
module information such as the module's: binary signature, name, directory path,  
and characteristics, wherein the first module provides and uses at least one  
application program interface (API);



~~inserting the metadata of the first module into the software package; and~~  
gathering application program interface (API) API dependency information for the first  
module, ~~wherein the first module can provide and use at least one API~~, by  
(a) receiving a list of dependent modules for a given process or DLL of the first  
module; and  
(b) storing, in the metadata of the first module, dependency information for the  
dependent modules in the list, wherein the dependency information includes  
API names and versions that the process or DLL depends on; and  
inserting the metadata of the first module into the software package.

52. (previously presented) A computer-readable medium as recited in Claim 51, wherein a linker creates the list of dependent modules for the given process or DLL and places the list in the metadata of the first module.
53. (previously presented) A computer-readable medium as recited in Claim 51, wherein the one or more stored sequences of instructions which, when executed by the one or more processors, further cause the one or more processors to carry out the step of:  
collecting additional dependencies from one or more module specifications that are  
separate from the list of dependent modules and placing the additional  
dependencies into the metadata of the first module;  
wherein the additional dependencies documented in each module lists API names and  
versions that the process or DLL depends on.

54. (previously presented) A computer-readable medium as recited in Claim 51, wherein the one or more stored sequences of instructions which, when executed by the one or more processors, further cause the one or more processors to carry out the steps of:  
creating metadata for each API; and  
inserting the API metadata into the software package, wherein metadata for an API  
includes, but is not limited to: the API's name and version.
55. (previously presented) A computer-readable medium as recited in Claim 51, wherein the one or more stored sequences of instructions which, when executed by the one or more processors, further cause the one or more processors to carry out the step of:  
calculating a binary signature for each module of the one or more modules and inserting  
the binary signature into the respective module's metadata, wherein each unique  
version of a module will have a unique binary signature.
56. (previously presented) A computer-readable medium as recited in Claim 51, wherein packages are created based on at least one of a feature, characteristic, or purpose.
57. (previously presented) A computer-readable medium as recited in Claim 51, wherein the one or more stored sequences of instructions which, when executed by the one or more processors, further cause the one or more processors to carry out the steps of:  
creating metadata for the software package that includes any package information such as  
the software package's: name, build date, and characteristics; and  
inserting the metadata of the software package into the software package.

58. (currently amended) An apparatus running a build environment for packaged software delivery in a distributed network of nodes, the apparatus comprising:
- a network interface that is coupled to a data network for receiving one or more packet flows therefrom;
  - a processor;
  - one or more stored sequences of instructions, of the build environment, which instructions, when executed by the processor, cause the processor to carry out the steps of:
    - compiling source code files into one or more executable file modules;
    - wherein each of the one or more modules contains an image for a process or a dynamically linked library (DLL);
    - creating a software package that comprises the one or more modules, wherein the software package is delivered to the nodes in the distributed network;
    - wherein packages are created based on at least one of a feature, characteristic, or purpose;
    - creating metadata for a first module, of the one or more modules, that includes any module information such as the first module's: binary signature, name, directory path, and characteristics, wherein the first module provides and uses at least one application program interface (API);
    - ~~inserting the metadata of the first module into the software package; and~~
    - ~~gathering application program interface (API) API dependency information for the first module, wherein the first module can provide and use at least one API, by~~

- (a) receiving a list of dependent modules for a given process or DLL of the first module;
- (b) storing, in the metadata of the first module, dependency information for the dependent modules in the list, wherein the dependency information includes API names and versions that the process or DLL depends on;
- (c) collecting additional dependency information from one or more module specifications that are separate from the list of dependent modules, wherein dependency information includes API names and versions that the process or DLL depends on; and
- (d) storing the additional dependency information in the metadata of the first module; and  
inserting the metadata of the first module into the software package.

59. (previously presented) An apparatus as recited in Claim 58, wherein a linker creates the list of dependent modules for the given process or DLL and places the list in the metadata of the first module.

60. (previously presented) An apparatus as recited in Claim 58, wherein the one or more stored sequences of instructions which, when executed by the processor, further cause the processor to carry out the steps of:  
creating metadata for each API; and  
inserting the API metadata into the software package, wherein metadata for an API includes, but is not limited to: the API's name and version.

61. (previously presented) An apparatus as recited in Claim 58, wherein the one or more stored sequences of instructions which, when executed by the processor, further cause the processor to carry out the step of:
- calculating a binary signature for each module of the one or more modules and inserting the binary signature into the respective module's metadata, wherein each unique version of a module will have a unique binary signature.
62. (previously presented) An apparatus as recited in Claim 58, wherein the one or more stored sequences of instructions which, when executed by the processor, further cause the processor to carry out the steps of:
- creating metadata for the software package that includes any package information such as the software package's: name, build date, and characteristics; and
- inserting the metadata of the software package into the software package.